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CNC CHARLESTON
5090.3a

LETTER REPORT FOR FUEL DISTRIBUTION SYSTEM (FDS) AREA 8 CNC CHARLESTON
SC
10/04/1999
ENSAFE INC



ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

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RECD BY 10/19/99
10/19/99

October 4, 1999

Water Monitoring, Assessment &
Protection Division

Mr. Paul Bristol
South Carolina Department of Health and Environmental Control
Groundwater Quality Section
Bureau of Water
2600 Bull Street
Columbia, SC 29201

Zone G

**RE: Fuel Distribution System, Area 8, Charleston Naval Complex,
South Carolina (SCDHEC No. 01183)**

Dear Mr. Bristol:

EnSafe is please to submit, on behalf of the U.S. Navy, Southern Division Naval Facilities Engineering Command, two copies of the letter report for SCDHEC petroleum site number 01183. This submittal incorporates the results of follow-on investigative activities performed in accordance with recommendations in the CAR and to address any SCDHEC comments concerning Area 8.

Should you have any questions or concerns regarding this submittal, please contact me.

Sincerely,

ENSAFE INC.

Craig R. Smith

Attachment

cc: T. Haverkost, EnSafe - Charleston
0144 File

Area 8

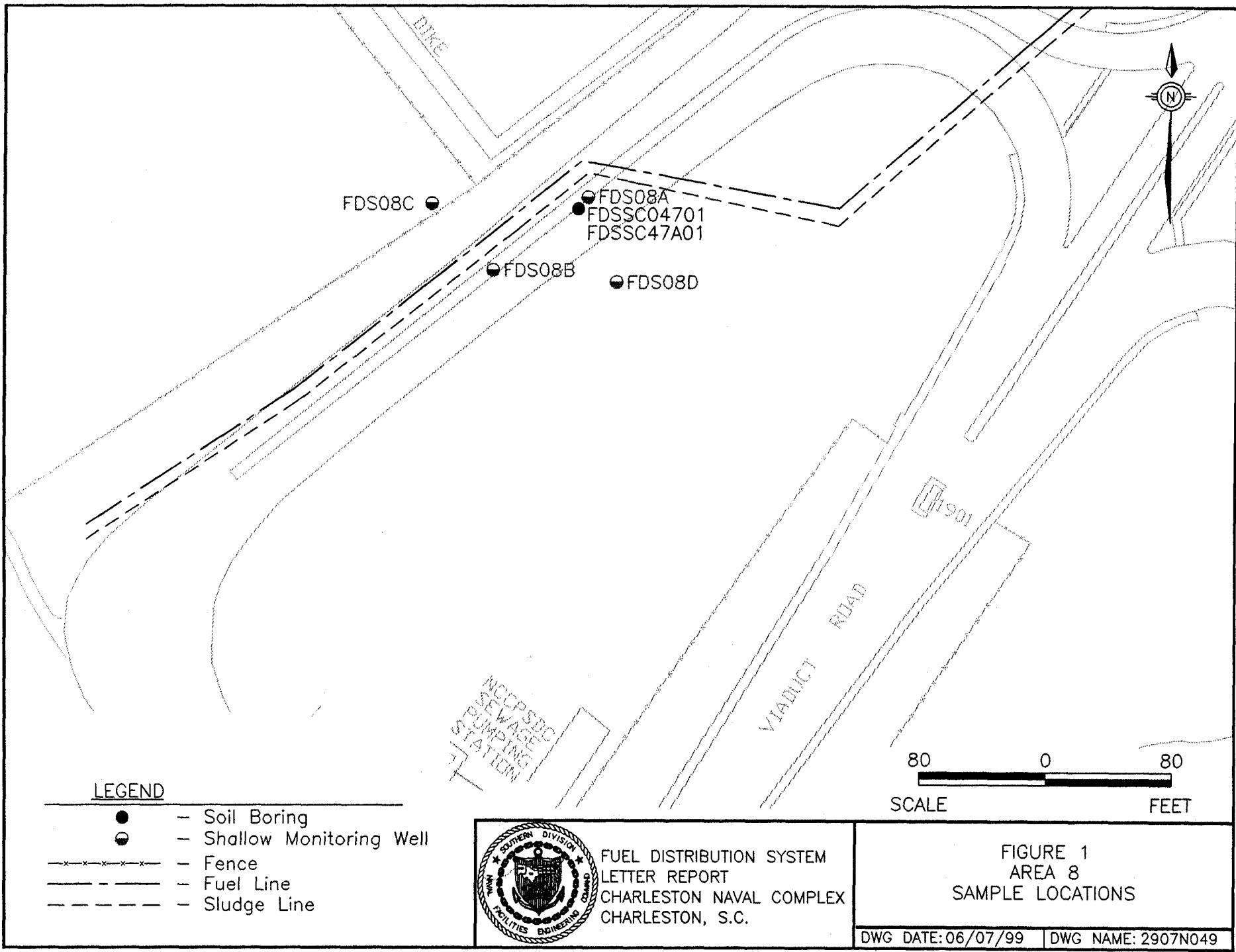
(SCDHEC No. 01183)

Background

Area 8 of the Fuel Distribution System (FDS) is associated with Phase I soil sample FDSSC04701, which exhibited total petroleum hydrocarbons-gasoline range organics of 19,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$), which prompted Phase II soil and groundwater sampling within Area 8. Phase II soil sampling revealed total naphthalenes of 5,210 $\mu\text{g}/\text{kg}$ which exceeded the risk-based screening levels (RBSL) of 210 $\mu\text{g}/\text{kg}$ at sample FDSSC47A01. To determine if groundwater has been adversely impacted by these petroleum constituents, three shallow groundwater monitoring wells were installed and sampled during Phase II. No groundwater RBSLs for inorganics were exceeded at Area 8. Total PAHs exceeded their RBSLs during the first sampling event at FDS08B, but decreased to below the RBSLs during the second sampling event (*Contamination Assessment Report* [CAR], EnSafe 1998).

Follow-on Activities

Analysis of site hydrology as presented in the CAR revealed that groundwater at Area 8 flows to the southeast. To fill a potential data gap at Area 8 and complete delineation of the area of presumed petroleum contamination, the CAR recommended and South Carolina Department of Health and Environmental Control (SCDHEC) concurred, a fourth monitoring well should be installed downgradient from boring FDSSC47A01 to determine if semivolatile organic compounds (SVOCs), specifically total naphthalenes have impacted groundwater. Monitoring well FDS08D was installed downgradient from FDSSC47A01 in February, 1999, and was sampled in March, 1999 for RBSL volatile organic compounds (VOCs), SVOCs, and inorganics. As recommended and agreed upon by SCDHEC, only FDS08D was sampled during the follow-on sampling; other Area 8 wells were not re-sampled. Figure 1 depicts the Area 8 sample locations, including the location of the new well. Attachment A contains the monitoring well construction diagram and well development record for FDS08D. The FDS CAR contains the boring logs and development records for previously installed Area 8 wells.



*Area 8, Fuel Distribution System
Charleston Naval Complex
October 1999*

Results

Figure 2 presents the shallow groundwater piezometric surface at Area 8 as measured in March 1999 at low-tide. Groundwater flow is generally to the east-southeast which differs slightly from the southeast low-tide flow direction shown in the CAR (EnSafe 1998). Aquifer slug testing at FDS08D determined an average horizontal hydraulic conductivity of 0.24 feet per day for the shallow aquifer. Attachment B contains the aquifer test results for Area 8.

Analytes detected in Area 8 shallow groundwater during the post-CAR sampling are summarized in Table 1. No VOCs or SVOCs were detected at FDS08D. The only inorganic analyte detected was barium at $38.9 \mu\text{g/L}$, below the RBSL of $2,000 \mu\text{g/L}$. Attachment C contains the analytical data from the post-CAR sampling. The FDS CAR contains the analytical data from all previous sampling at Area 8.

Table 1
Analytes Detected in Shallow Groundwater
Post-CAR Sampling, Area 8
Fuel Distribution System

Parameters	Location	Sample Results	RBSL ($\mu\text{g/L}$)	Exceeds RBSL
Inorganics ($\mu\text{g/L}$)				
Barium (Ba)	FDS08D	38.9	2000	No

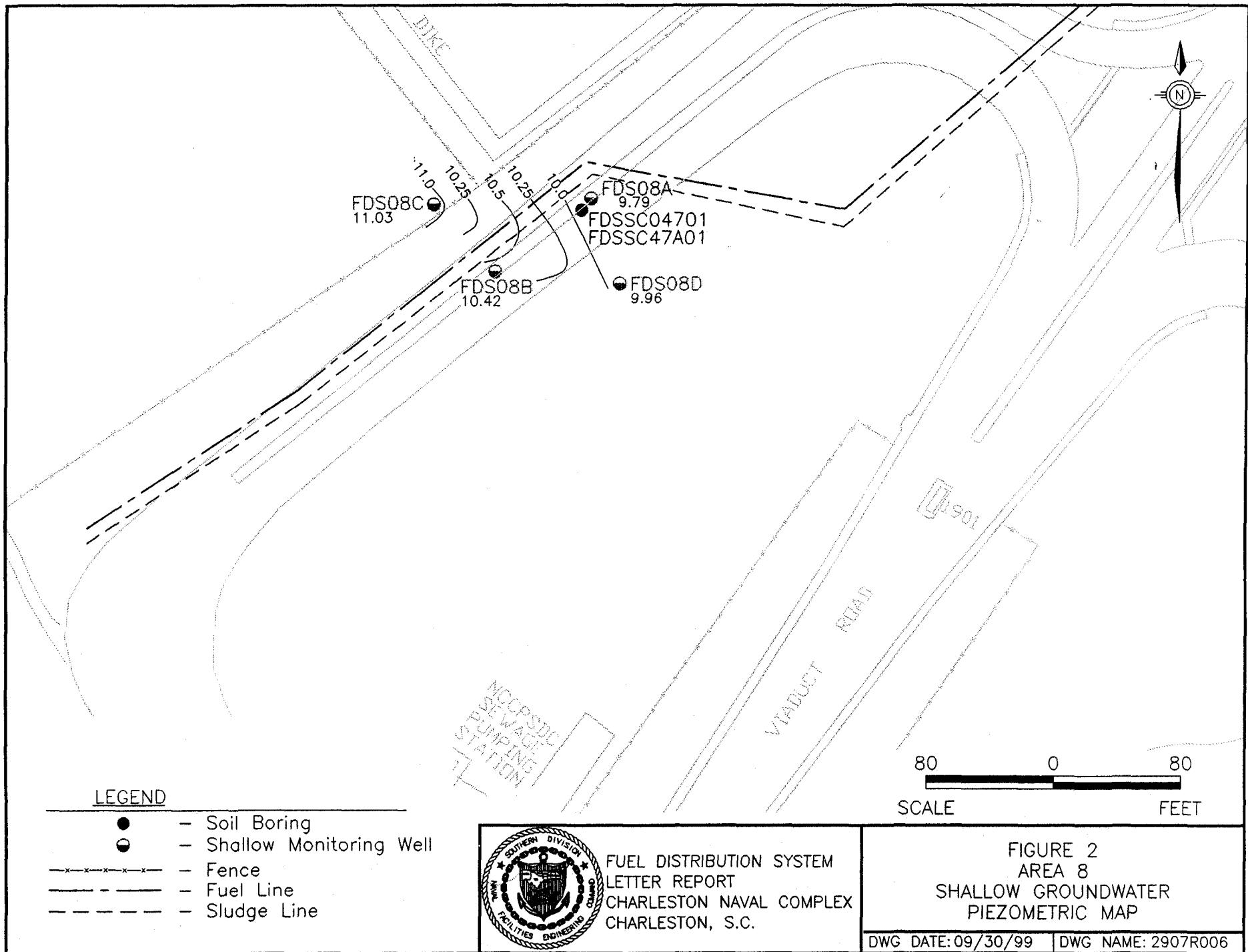
Notes:

$\mu\text{g/L}$ = Micrograms per liter

RBSLs from the *South Carolina Risk-Based Corrective Action for Petroleum Releases* (SCDHEC, January 5, 1998).

Conclusions and Recommendations

As reported in the CAR, the total naphthalene concentration detected in soil sample FDSSC47A01 was $5,210 \mu\text{g/kg}$ which exceeds the RBSL of $210 \mu\text{g/kg}$. Because this sample was collected below the water table at a depth of 13.5 to 15.5 feet, it is effectively a sample of the aquifer matrix, and therefore generation of a Site Specific Target Level would not be applicable. This concentration



FUEL DISTRIBUTION SYSTEM
LETTER REPORT
CHARLESTON NAVAL COMPLEX
CHARLESTON, S.C.

FIGURE 2
AREA 8
SHALLOW GROUNDWATER
PIEZOMETRIC MAP

DWG DATE: 09/30/99 DWG NAME: 2907R006

is below the generic soil-to-groundwater soil screening level (SSL [DAF=20]) of 84,000 $\mu\text{g}/\text{kg}$ (from the *Soil Screening Guidance: Technical Background Document* [USEPA 1996]), suggesting migration to groundwater is unlikely. Previous groundwater results which exceeded RBSLs have decreased to below RBSL concentrations. During the most recent sampling event for each well, no analytes were detected in groundwater at concentrations exceeding the RBSL.

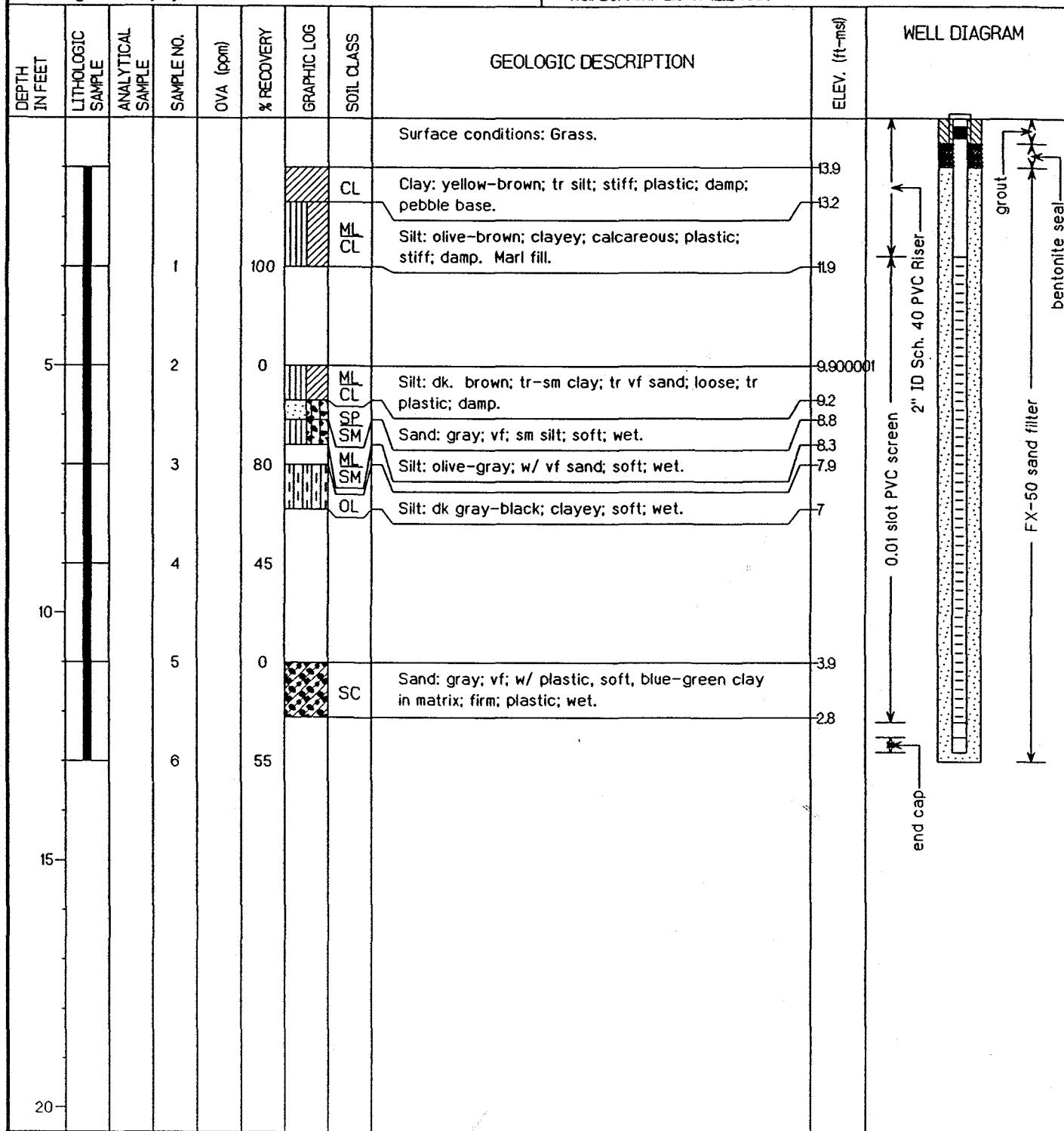
Groundwater analytical data confirms leaching is not occurring. Groundwater is not currently used at Charleston Naval Complex (CNC) as a source of potable or process water; a basewide potable water system provides drinking and process water to buildings at CNC. This system is to remain in operation under the current base reuse plan. In addition, the shallow aquifer for this investigation contains significant concentrations of naturally occurring chlorides and elevated total dissolved solids, which makes this water-bearing unit a questionable potable water source.

Organic chemicals of concern (COCs) exceeding RBSLs were detected in subsurface soil at boring FDSSC47A01. To demonstrate that these constituents are not adversely impacting groundwater at Area 8, monitoring wells FDS08A and FDS08D should be monitored twice at three-month intervals to ensure that groundwater constituent concentrations are consistent or decreasing and that no further leaching of organics is taking place.

If concentrations remain below groundwater RBSLs during this monitoring program, these results should be sufficient to support a no further action decision for soil and groundwater at Area 8.

Attachment A
Monitoring Well Construction Diagram/Well
Development Record

Project: Fuel Distribution System -Charleston Naval Complex	Coordinates: 2319473.27 E, 372172.15 N
Location: Charleston, SC	Surface Elevation: 14.9 feet msl
Started at 1730 on 02-02-99	TOC Elevation: 14.76 feet msl
Completed at 1900 on 02-02-99	Depth to Groundwater: 5.60 feet TOC Measured: 3/5/99
Drilling Method: 4.25" ID (8.0" OD) HSA with split spoon	Groundwater Elevation: 9.16 feet msl
Drilling Company: Alliance Environmental (SC cert #889)	Total Depth: 12.8 feet
Geologist: P. Bayley	Well Screen: 2.8 to 12.2 feet



ENSAFE
CHARLESTON NAVAL COMPLEX
WELL DEVELOPMENT STATUS REPORT
ZONE G FDS

WELL DEVELOPMENT SUMMARY

Well:NBCG\FDS08D

Summary Log of well development progress.
Readings are final readings for each visit.
Volume data are cumulative from start of development.

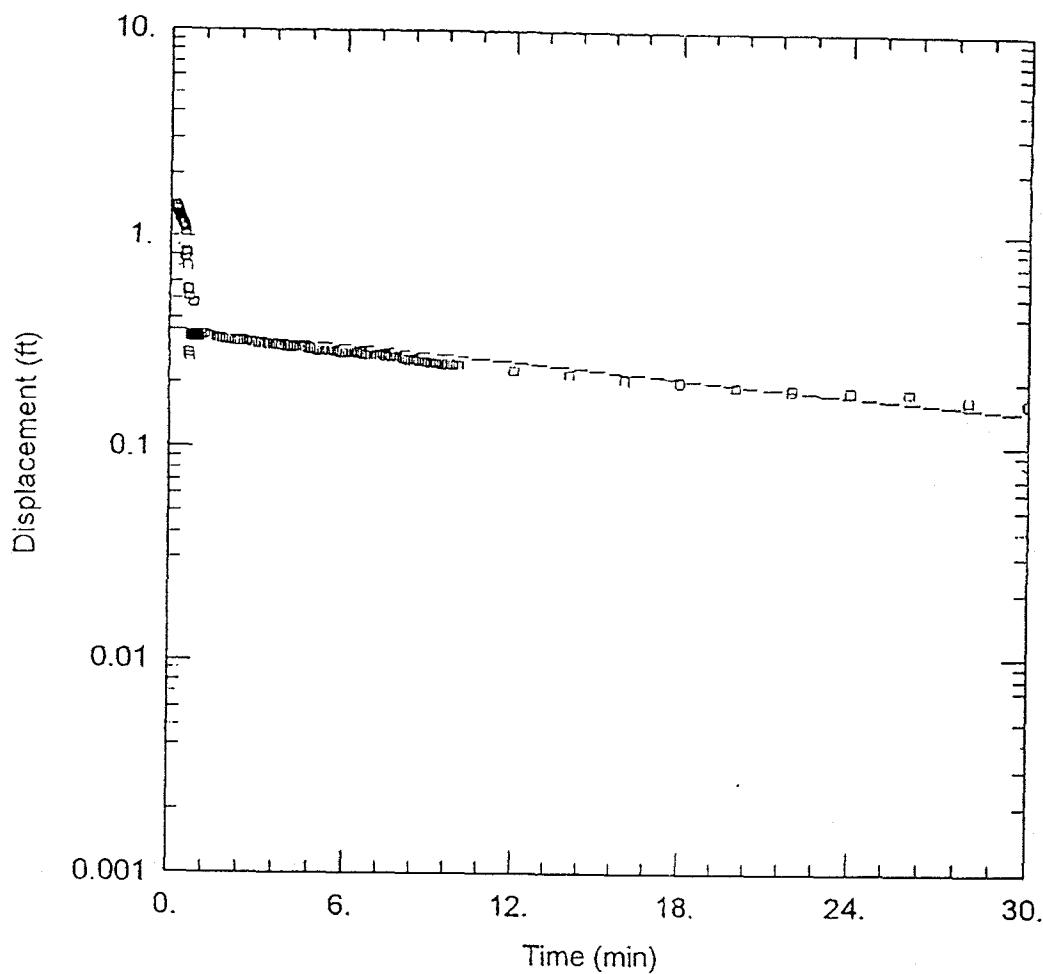
DATE	VOLUME Gallons	pH	Turb NTU	Cond mS/cm	Temp Celsius	Sal %
2-25-99	17.5	7.06	68	2.81	16.5	-
2-25-99	20	7.12	127	2.73	17.8	-
2-25-99	22.5	7.16	88	2.76	17.9	-
2-25-99	25	7.08	136	2.83	18	-
2-25-99	27	7.10	138	2.80	17.9	-
2-25-99	29	7.15	89	2.79	17.7	-
2-25-99	31	6.52	58	2.82	18.0	-
2-25-99	33	6.27	73	2.53	17.8	-
2-25-99	34	6.55	90	2.79	17.9	-
2-25-99	35	6.65	59	2.63	17.8	-
2-25-99	36	6.66	60	2.79	17.2	-
2-25-99	38	6.64	58	2.81	17.8	-
2-25-99	39.5	6.65	30	2.82	17.5	-
2-25-99	41	6.82	19	2.79	17.1	-
2-25-99	42	6.68	11	2.52	17.0	-
2-25-99	43	6.52	17	2.51	17.4	-

DATE	VOLUME Gallons	pH	Turb NTU	Cond mS/cm	Temp Celsius	Sal %
2-25-99	44	6.46	12	2.52	17.1	-

Well Development Completed on: 2-25-99

COMMENTS :

Attachment B
Aquifer Test Results



FDS08D INJECTION

Data Set: C:\TEMP\CHARLE~1\4-08D.AQT
 Date: 06/21/99

Time: 11:54:12

PROJECT INFORMATION

Company: EnSafe
 Client: SouthDiv
 Project: 0144
 Test Location: Charleston
 Test Well: FDS08D
 Test Date: 6/3/99

AQUIFER DATA

Saturated Thickness: 31. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 1.405 ft
 Casing Radius: 0.0833 ft
 Screen Length: 10. ft
 Water Column Height: 7.8 ft
 Wellbore Radius: 0.333 ft
 Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined $K = 0.0001962 \text{ ft/min}$

Data Set: C:\TEMP\CHARLE~1\4-08D.AQT
Title: FDS08D Injection
Date: 06/21/99
Time: 14:38:39

PROJECT INFORMATION

Company: EnSafe
Client: SouthDiv
Project: 0144
Location: Charleston
Test Date: 6/3/99
Test Well: FDS08D

AQUIFER DATA

Saturated Thickness: 31. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: FDS08D

X Location: 0. ft

Y Location: 0. ft

No. of observations: 131

Observation Data						
Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)
0.1666	1.405	0.7333	0.326	6.6	0.27	
0.175	1.402	0.75	0.326	6.8	0.267	
0.1833	1.389	0.7666	0.33	7.	0.267	
0.1916	1.377	0.7833	0.33	7.2	0.267	
0.2	1.364	0.8	0.326	7.4	0.264	
0.2083	1.355	0.8166	0.477	7.6	0.26	
0.2166	1.345	0.8333	0.336	7.8	0.26	
0.225	1.333	0.85	0.333	8.	0.257	
0.2333	1.323	0.8666	0.333	8.2	0.254	
0.2416	1.311	0.8833	0.33	8.4	0.254	
0.25	1.339	0.9	0.33	8.6	0.251	
0.2583	1.282	0.9166	0.326	8.8	0.248	
0.2666	1.282	0.9333	0.33	9.	0.245	
0.275	1.273	0.95	0.326	9.2	0.245	
0.2833	1.263	0.9666	0.326	9.4	0.242	
0.2916	1.254	0.9833	0.326	9.6	0.242	
0.3	1.248	1.	0.326	9.8	0.242	
0.3083	1.238	1.2	0.339	10.	0.238	

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3166	1.229	1.4	0.33	12.	0.226
0.325	1.219	1.6	0.323	14.	0.216
0.3333	1.21	1.8	0.32	16.	0.207
0.35	1.194	2.	0.317	18.	0.201
0.3666	1.178	2.2	0.314	20.	0.191
0.3833	1.166	2.4	0.311	22.	0.185
0.4	1.15	2.6	0.311	24.	0.182
0.4166	1.138	2.8	0.308	26.	0.179
0.4333	1.125	3.	0.301	28.	0.166
0.45	1.109	3.2	0.301	30.	0.16
0.4666	1.097	3.4	0.301	32.	0.157
0.4833	1.087	3.6	0.298	34.	0.15
0.5	1.075	3.8	0.295	36.	0.147
0.5166	1.034	4.	0.292	38.	0.147
0.5333	0.792	4.2	0.292	40.	0.141
0.55	0.839	4.4	0.289	42.	0.141
0.5666	0.829	4.6	0.289	44.	0.132
0.5833	0.814	4.8	0.286	46.	0.125
0.6	0.707	5.	0.282	48.	0.122
0.6166	0.553	5.2	0.279	50.	0.119
0.6333	0.54	5.4	0.279	52.	0.116
0.65	0.509	5.6	0.279	54.	0.113
0.6666	0.273	5.8	0.276	56.	0.106
0.6833	0.26	6.	0.273	58.	0.106
0.7	0.326	6.2	0.273	60.	0.106
0.7166	0.326	6.4	0.273		

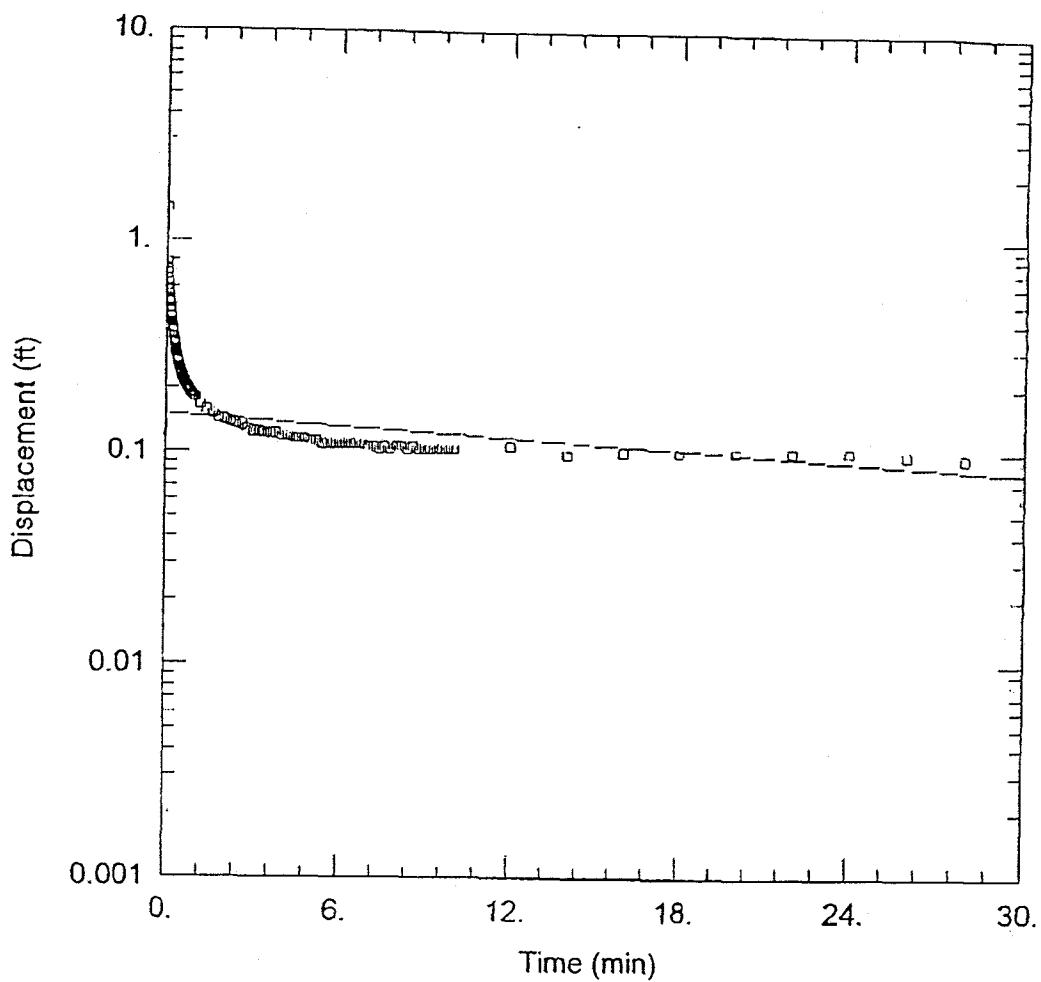
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

VISUAL ESTIMATION RESULTSEstimated Parameters

Parameter	Estimate	
K	0.0001962	ft/min
y0	0.3544	ft



FDS08D WITHDRAWAL

Data Set: C:\TEMP\CHARLE~1\4-18D.AQT

Date: 06/21/99

Time: 12:04:28

PROJECT INFORMATION

Company: EnSafe

Client: SouthDiv

Project: 0144

Test Location: Charleston

Test Well: FDS08D

Test Date: 6/3/99

AQUIFER DATA

Saturated Thickness: 31. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 1.405 ft

Water Column Height: 7.8 ft

Casing Radius: 0.0833 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined

K = 0.0001395 ft/min

Data Set: C:\TEMP\CHARLE~1\4-18D.AQT

Title: FDS08D Withdrawal

Date: 06/21/99

Time: 14:39:08

PROJECT INFORMATION

Company: EnSafe

Client: SouthDiv

Project: 0144

Location: Charleston

Test Date: 6/3/99

Test Well: FDS08D

AQUIFER DATA

Saturated Thickness: 31. ft

Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: FDS08D

X Location: 0. ft

Y Location: 0. ft

No. of observations: 133

Observation Data						
Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)
0.0166	0.788	0.45	0.254	3.4	0.122	
0.025	0.763	0.4666	0.251	3.6	0.122	
0.0333	0.738	0.4833	0.245	3.8	0.122	
0.0416	0.713	0.5	0.242	4.	0.119	
0.05	0.685	0.5166	0.238	4.2	0.119	
0.0583	0.644	0.5333	0.235	4.4	0.116	
0.0666	0.641	0.55	0.229	4.6	0.116	
0.075	0.619	0.5666	0.226	4.8	0.116	
0.0833	0.6	0.5833	0.223	5.	0.113	
0.0916	0.581	0.6	0.22	5.2	0.113	
0.1	0.565	0.6166	0.216	5.4	0.11	
0.1083	0.549	0.6333	0.216	5.6	0.11	
0.1166	0.534	0.65	0.213	5.8	0.11	
0.125	0.518	0.6666	0.21	6.	0.11	
0.1333	0.502	0.6833	0.207	6.2	0.11	
0.1416	0.487	0.7	0.204	6.4	0.11	
0.15	0.474	0.7166	0.204	6.6	0.11	
0.1583	0.462	0.7333	0.201	6.8	0.11	

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1666	0.449	0.75	0.201	7.	0.106
0.175	0.436	0.7666	0.198	7.2	0.106
0.1833	0.427	0.7833	0.194	7.4	0.103
0.1916	0.418	0.8	0.194	7.6	0.106
0.2	0.405	0.8166	0.194	7.8	0.103
0.2083	0.399	0.8333	0.191	8.	0.106
0.2166	0.389	0.85	0.188	8.2	0.106
0.225	0.38	0.8666	0.188	8.4	0.103
0.2333	0.374	0.8833	0.188	8.6	0.106
0.2416	0.364	0.9	0.185	8.8	0.103
0.25	0.355	0.9166	0.185	9.	0.103
0.2583	0.352	0.9333	0.185	9.2	0.103
0.2666	0.342	0.95	0.182	9.4	0.103
0.275	0.336	0.9666	0.179	9.6	0.103
0.2833	0.33	0.9833	0.179	9.8	0.103
0.2916	0.326	1.	0.179	10.	0.103
0.3	0.32	1.2	0.166	12.	0.106
0.3083	0.314	1.4	0.157	14.	0.097
0.3166	0.311	1.6	0.15	16.	0.1
0.325	0.304	1.8	0.144	18.	0.1
0.3333	0.301	2.	0.141	20.	0.1
0.35	0.292	2.2	0.138	22.	0.1
0.3666	0.286	2.4	0.135	24.	0.1
0.3833	0.279	2.6	0.132	26.	0.097
0.4	0.27	2.8	0.128	28.	0.094
0.4166	0.267	3.	0.125		
0.4333	0.26	3.2	0.125		

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

VISUAL ESTIMATION RESULTSEstimated Parameters

Parameter	Estimate	
K	0.0001395	ft/min
y0	0.1497	ft

Attachment C
Analytical Data

DATALCP3
06/08/99

CHARLESTON CTO-0144 FUEL DISTRIBUTION
POST-CAR SAMPLING
AREA 8

Page: 1
Time: 11:51

SW846-META	SAMPLE ID -----> ORIGINAL ID -----> LAB SAMPLE ID ---> ID FROM REPORT --> SAMPLE DATE -----> DATE EXTRACTED --> DATE ANALYZED ---> MATRIX -----> UNITS ----->	FDS-G-W08D-01 FDGFW08D01 37648.03 FDGFW08D01 03/05/99 03/18/99 03/19/99 Water UG/L						
CAS #	Parameter	37648	VAL					
7439-97-6	Mercury (Hg)		0.1	U				
7440-38-2	Arsenic (As)		3.3	U				
7440-39-3	Barium (Ba)		38.9					
7440-43-9	Cadmium (Cd)		0.3	U				
7440-47-3	Chromium (Cr)		0.7	U				
7439-92-1	Lead (Pb)		2.1	U				
7782-49-2	Selenium (Se)		4.5	U				
7440-22-4	Silver (Ag)		1.4	U				

*** Validation Complete ***

DATALCP3
06/08/99

CHARLESTON CTO-0144 FUEL DISTRIBUTION
POST-CAR SAMPLING
AREA 8

Page: 2
Time: 11:51

SW846-SVOA		SAMPLE ID -----> ORIGINAL ID -----> LAB SAMPLE ID -----> ID FROM REPORT -----> SAMPLE DATE -----> DATE EXTRACTED -----> DATE ANALYZED -----> MATRIX -----> UNITS ----->	FDS-G-W08D-01 FDGSW08D01 37648.03 FDGSW08D01 03/05/99 03/08/99 03/15/99 Water UG/L						
CAS #	Parameter	37648	VAL						
91-20-3	Naphthalene	10.	U						
56-55-3	Benzo(a)anthracene	10.	U						
218-01-9	Chrysene	10.	U						
205-99-2	Benzo(b)fluoranthene	10.	U						
207-08-9	Benzo(k)fluoranthene	10.	U						

*** Validation Complete ***

DATALCP3
06/08/99

CHARLESTON CTO-0144 FUEL DISTRIBUTION
POST-CAR SAMPLING
AREA 8

Page: 3
Time: 11:51

SW846-VOA	SAMPLE ID -----> ORIGINAL ID -----> LAB SAMPLE ID ----> ID FROM REPORT ---> SAMPLE DATE -----> DATE ANALYZED ---> MATRIX -----> UNITS ----->	FDS-G-W08D-01 FDSGW08D01 37648.03 FDSGW08D01 03/05/99 03/10/99 Water UG/L						
CAS #	Parameter	37648	VAL					
71-43-2	Benzene		5.	U				
100-41-4	Ethylbenzene		5.	U				
108-88-3	Toluene		5.	U				
1330-20-7	Xylene (Total)		5.	U				

*** Validation Complete ***

#01183

AREA 8

Attachment C
Analytical Data

DATALCP3
10/21/99

CHARLESTON CTO-0144 FUEL DISTRIBUTION
POST-CAR GROUNDWATER SAMPLING
AREA 8

Page: 1
Time: 16:19

SW-SVOA	SAMPLE ID ----->	FDS-G-W08D-01					
	ORIGINAL ID ----->	FDSGW08D01					
	LAB SAMPLE ID ---->	37648.03					
	ID FROM REPORT -->	FDSGW08D01					
	SAMPLE DATE ----->	03/05/99					
	DATE EXTRACTED -->	03/08/99					
	DATE ANALYZED -->	03/15/99					
	MATRIX ----->	Water					
	UNITS ----->	UG/L					
CAS #	Parameter	37648	VAL				
108-95-2	Phenol	10.	U				
111-44-4	bis(2-Chloroethyl)ether	10.	U				
95-57-8	2-Chlorophenol	10.	U				
541-73-1	1,3-Dichlorobenzene	10.	U				
106-46-7	1,4-Dichlorobenzene	10.	U				
100-51-6	Benzyl alcohol	10.	U				
95-50-1	1,2-Dichlorobenzene	10.	U				
95-48-7	2-Methylphenol (o-Cresol)	10.	U				
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U				
106-44-5	4-Methylphenol (p-Cresol)	10.	U				
621-64-7	N-Nitroso-di-n-propylamine	10.	U				
67-72-1	Hexachloroethane	10.	U				
98-95-3	Nitrobenzene	10.	U				
78-59-1	Isophorone	10.	U				
88-75-5	2-Nitrophenol	10.	U				
105-67-9	2,4-Dimethylphenol	10.	U				
65-85-0	Benzoic acid	25.	U				
111-91-1	bis(2-Chloroethoxy)methane	10.	U				
120-83-2	2,4-Dichlorophenol	10.	U				
120-82-1	1,2,4-Trichlorobenzene	10.	U				
91-20-3	Naphthalene	10.	U				
106-47-8	4-Chloroaniline	10.	U				
87-68-3	Hexachlorobutadiene	10.	U				
59-50-7	4-Chloro-3-methylphenol	10.	U				
91-57-6	2-Methylnaphthalene	10.	U				
77-47-4	Hexachlorocyclopentadiene	10.	U				
88-06-2	2,4,6-Trichlorophenol	10.	U				
95-95-4	2,4,5-Trichlorophenol	25.	U				
91-58-7	2-Chloronaphthalene	10.	U				
88-74-4	2-Nitroaniline	25.	U				
131-11-3	Dimethyl phthalate	10.	U				
208-96-8	Acenaphthylene	10.	U				
99-09-2	3-Nitroaniline	25.	U				
83-32-9	Acenaphthene	10.	U				
51-28-5	2,4-Dinitrophenol	25.	U				
100-02-7	4-Nitrophenol	25.	U				

*** Validation Complete ***

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CHARLESTON CTO-0144 FUEL DISTRIBUTION
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SW-SVOA	SAMPLE ID -----> ORIGINAL ID -----> LAB SAMPLE ID ---> ID FROM REPORT --> SAMPLE DATE -----> DATE EXTRACTED --> DATE ANALYZED --> MATRIX -----> UNITS ----->	FDS-G-W08D-01 FDGWO8D01 37648.03 FDGWO8D01 03/05/99 03/08/99 03/15/99 Water UG/L						
CAS #	Parameter	37648	VAL					
132-64-9	Dibenzofuran	10.	U					
121-14-2	2,4-Dinitrotoluene	10.	U					
606-20-2	2,6-Dinitrotoluene	10.	U					
84-66-2	Diethylphthalate	10.	U					
7005-72-3	4-Chlorophenylphenylether	10.	U					
86-73-7	Fluorene	10.	U					
100-01-6	4-Nitroaniline	25.	U					
534-52-1	2-Methyl-4,6-Dinitrophenol	25.	U					
86-30-6	N-Nitrosodiphenylamine	10.	U					
101-55-3	4-Bromophenyl-phenylether	10.	U					
118-74-1	Hexachlorobenzene	10.	U					
87-86-5	Pentachlorophenol	25.	U					
85-01-8	Phenanthrene	10.	U					
120-12-7	Anthracene	10.	U					
84-74-2	Di-n-butylphthalate	10.	U					
206-44-0	Fluoranthene	10.	U					
129-00-0	Pyrene	10.	U					
85-68-7	Butylbenzylphthalate	10.	U					
91-94-1	3,3'-Dichlorobenzidine	20.	U					
56-55-3	Benzo(a)anthracene	10.	U					
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U					
218-01-9	Chrysene	10.	U					
117-84-0	Di-n-octyl phthalate	10.	U					
205-99-2	Benzo(b)fluoranthene	10.	U					
207-08-9	Benzo(k)fluoranthene	10.	U					
50-32-8	Benzo(a)pyrene	10.	U					
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U					
53-70-3	Dibenz(a,h)anthracene	10.	U					
191-24-2	Benzo(g,h,i)perylene	10.	U					

*** Validation Complete ***

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SW846-META	SAMPLE ID ----->	FDS-G-W08D-01					
	ORIGINAL ID ----->	FDGHW08D01					
	LAB SAMPLE ID ---->	37648.03					
	ID FROM REPORT -->	FDGHW08D01					
	SAMPLE DATE ----->	03/05/99					
	DATE EXTRACTED -->	03/18/99					
	DATE ANALYZED -->	03/19/99					
	MATRIX ----->	Water					
	UNITS ----->	UG/L					
CAS #	Parameter	37648	VAL				
7439-97-6	Mercury (Hg)	0.1	U				
7440-38-2	Arsenic (As)	3.3	U				
7440-39-3	Barium (Ba)	38.9					
7440-43-9	Cadmium (Cd)	0.3	U				
7440-47-3	Chromium (Cr)	0.7	U				
7439-92-1	Lead (Pb)	2.1	U				
7782-49-2	Selenium (Se)	4.5	U				
7440-22-4	Silver (Ag)	1.4	U				

*** Validation Complete ***

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SW846-VOA		SAMPLE ID -----> ORIGINAL ID -----> LAB SAMPLE ID ---> ID FROM REPORT --> SAMPLE DATE -----> DATE ANALYZED ---> MATRIX -----> UNITS ----->	FDS-G-W08D-01 FDGWW08D01 37648.03 FDGWW08D01 03/05/99 03/10/99 Water UG/L					
CAS #	Parameter	37648	VAL					
71-43-2	Benzene	5.	U					
100-41-4	Ethylbenzene	5.	U					
108-88-3	Toluene	5.	U					
1330-20-7	Xylene (Total)	5.	U					

*** Validation Complete ***